

# EXHIBIT 4

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December 12, 2024

**VIA E-MAIL**Reza Mirzaie  
RUSS AUGUST & KABAT  
12424 Wilshire Boulevard  
12<sup>th</sup> Floor  
Los Angeles, CA 90025  
rmirzaie@raklaw.comRe: *VirtaMove, Corp. v. Hewlett Packard Enterprise Company*, Case No. 2:24-cv-00093-JRG

Dear Mr. Mirzaie:

We write regarding VirtaMove's Disclosures of Asserted Claims and Infringement Contentions Pursuant to Local Patent Rules 3-1, served on IBM on July 1, 2024 ("814 Patent Infringement Contentions") and on November 5, 2024 ("058 Patent Infringement Contentions") (together the "Infringement Contentions"). IBM has notified VirtaMove about the several deficiencies in the Infringement Contentions, including, the failure to cite to, identify, or describe any documentation purporting to show infringement by two accused instrumentalities: IBM Cloud Private and IBM Hybrid Cloud Mesh. *See* IBM's Resp. to VirtaMove's ROG No. 5. Likewise, HPE's July 10, 2024 Letter describes deficiencies in VirtaMove's Contentions that substantially overlap with the deficiencies in VirtaMove's Infringement Contentions served on IBM. *See* HPE's July 10, 2024 Letter. Notwithstanding these notices, and despite having received IBM's technical production months ago, VirtaMove has failed to remedy the deficiencies in its proposed Amended Infringement Contentions. As to the issues raised below, please let us know if VirtaMove presently intends to remedy each of these deficiencies and when VirtaMove will provide a proposed supplement providing the requested clarity to VirtaMove's contentions.

IBM understands that VirtaMove intends to seek leave to amend the Infringement Contentions to (1) assert earlier priority dates and (2) edit the '058 infringement chart. *See* October 23, 2024 Correspondence from Daniel Kolko re Amendment to Plaintiff's Infringement Contentions. As to the first proposed amendment regarding priority dates, IBM does not believe that VirtaMove was diligent in amending its contentions to assert earlier priority dates. However, in an effort to limit the number of disputes raised with the Court, IBM will not oppose VirtaMove's

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proposed amendment to its priority date contention provided that VirtaMove agrees to not oppose a request by IBM for leave to amend and/or supplement its invalidity contentions within four weeks of the Court granting VirtaMove's motion. Second, as to VirtaMove's edit to the '058 infringement chart, although IBM does not currently oppose that proposed amendment, the Infringement Contentions (including with the proposed amendment) for both Asserted Patents remain inexcusably deficient. Accordingly, IBM reserves its right to seek Court intervention to ensure that the Infringement Contentions comply with the requirements of P.R. 3-1 or seek alternative relief by striking any expert opinion purporting to rely on these deficient contentions. Provided that VirtaMove includes IBM's reservation of rights as to the sufficiency of the contentions in VirtaMove's motion to amend, VirtaMove may file its request for leave to amend as unopposed.

### **I. General Deficiencies**

#### **a. Accused Products**

*First*, VirtaMove's purported identification of IBM's "Accused Instrumentalities" fails to satisfy P.R. 3-1(b), which requires that VirtaMove identify "[s]eparately for each asserted claim, each accused apparatus, product, device, process, method, act, or other instrumentality," and that such identification "shall be as specific as possible." In its Infringement Contentions, VirtaMove purports to identify the Accused Instrumentalities based on broad categorical descriptions, identifying the Accused Instrumentalities as:

including certain (a) "IBM products and services using secure containerized applications, including without limitation IBM's Cloud Kubernetes Service (IKS), IBM Cloud Private (ICP), and IBM Hybrid Cloud mesh, and all versions and variations thereof since the issuance of the ['814] patent[;]" and (b) "IBM products and services using user mode critical system elements as shared libraries, including without limitation IBM Cloud Kubernetes Service (IKS), IBM Cloud Private (ICP), and IBM Hybrid Cloud mesh, and all versions and variations thereof since the issuance of the ['058] patent."

'814 Patent Infringement Contentions at pg. 1; '058 Patent Infringement Contentions at pg. 1. VirtaMove also asserts that "VirtaMove's assertions of infringement apply to all variations, versions, and applications of each of the Accused Instrumentalities, on information and belief, that different variations, versions, and applications of each of the Accused Instrumentalities are substantially the same for purposes of infringement of the Asserted Claims." '814 Patent Infringement Contentions at pg. 1; '058 Patent Infringement Contentions at pg. 1. Courts in this district have consistently found that the use of such catch-all language fails to satisfy P.R. 3-1(b). *See, e.g., Alacritech Inc. v. CenturyLink, Inc.*, No. 2:16-CV-00693-JRG-RSP, 2017 WL 3007464 (E.D. Tex. July 14, 2017); *Tivo Inc. v. Samsung Elecs. Co.*, No. 2:15-CV-1503-JRG, 2016 WL

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5172008 (E.D. Tex. July 22, 2016). IBM understands that VirtaMove has only identified IBM Cloud Kubernetes Service, IBM Cloud Private, and IBM Hybrid Cloud Mesh as the “Accused Instrumentalities.” To the extent that VirtaMove contends that additional IBM products and services using secure containerized applications and/or user mode critical system elements as shared libraries infringe the Asserted Claims, VirtaMove must identify those with specificity.

*Second*, VirtaMove’s Infringement Contentions fall significantly short of satisfying P.R. 3-1(c), which requires “[a] chart identifying specifically *where each element of each asserted claim* is found within *each instrumentality*.” While VirtaMove accuses “IBM’s Cloud Kubernetes Service (IKS), IBM Cloud Private (ICP), and IBM Hybrid Cloud mesh,” as “Accused Instrumentalities,” VirtaMove’s Infringement Contentions are limited to allegations of infringement relating **only** to one product—IBM Cloud Kubernetes Service. *See generally* ’814 Patent Infringement Contentions; ’058 Patent Infringement Contentions. VirtaMove alleges that “[e]ach Accused Instrumentality infringes the claims in substantially the same way, and the evidence shown in this chart is similarly applicable to each Accused Instrumentality.” ’814 Patent Infringement Contentions at pg. 1; ’058 Patent Infringement Contentions at pg. 1. However, such “broad conclusory allegations that the products are similar do not allow Plaintiffs to circumvent the Local Rules.” *UltimatePointer, LLC v. Nintendo Co., Ltd.*, No. 6:11-CV-496, 2013 WL 12140173, at \*3 (E.D. Tex. May 28, 2013). Rather, “[t]o designate and chart only an exemplar accused infringing product, Plaintiff must provide an explanation of the technical and functional identity of the products represented.” *Id.* While “[i]t is possible for a plaintiff to use a single chart for multiple products,” a plaintiff can only do so “*if separate charts would be identical for each product.*” *Id.* Yet, VirtaMove failed to offer any explanation of the technical and functional identity of the Accused Instrumentalities, much less any explanation to suggest that the claim charts for each Accused Instrumentality would be identical. Absent from VirtaMove’s Infringement Contentions is any mention of IBM Cloud Private and IBM Hybrid Cloud Mesh beyond their mere identification in the first paragraph of the first page of its Infringement Contentions. This is insufficient and demonstrates VirtaMove’s failure to comply with P.R. 3-1(c). As such, only IBM Cloud Kubernetes Service are within the scope of VirtaMove’s contentions.

Please confirm by December 20, 2024 that VirtaMove will supplement its Infringement Contentions to remove IBM Cloud Private and IBM Hybrid Cloud Mesh as Accused Instrumentalities.

### b. Doctrine of Equivalents

VirtaMove’s contentions under the doctrine of equivalents (“DOE”) fail to satisfy the requirements of P.R. 3-1(d). Specifically, VirtaMove cannot satisfy P.R. 3-1(d) by merely including the boilerplate statement that “to the extent any claim limitation is not met literally, it is nonetheless met under the doctrine of equivalents because the differences between the claim

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limitation and each Accused Instrumentality would be insubstantial, and each Accused Instrumentality performs substantially the same function, in substantially the same way, to achieve the same result as the claimed invention.” ’814 Patent Infringement Contentions at pg. 1; ’058 Patent Infringement Contentions at pg. 1. Courts in this district have consistently found that such conclusory and boilerplate allegations are insufficient. *See, e.g., Sycamore IP Holdings LLC v. AT&T Corp.*, No. 2:16-CV-588-WCB, 2017 WL 4517953, at \*3 (E.D. Tex. Oct. 10, 2017) (“Courts in this district have been clear that doctrine of equivalents theories must be laid out in detail in a party’s infringement contentions and that the type of boilerplate allegations contained in [the plaintiff’s] infringement contentions are insufficient.”); *Eolas Techs. Inc. v. Amazon.com, Inc.*, No. 6:15-CV-01038, 2016 WL 7666160, at \*3 (E.D. Tex. Dec. 5, 2016); *Biscotti Inc. v. Microsoft Corp.*, No. 2:13-CV-01015-JRG-RSP, 2017 WL 2267283, at \*4 (E.D. Tex. May 24, 2017); *Godo Kaisha IP Bridge 1 v. Broadcom Ltd.*, No. 2:16-CV-134-JRG-RSP, 2017 WL 2869331, at \*2 (E.D. Tex. Apr. 27, 2017).

Please confirm by December 20, 2024 that VirtaMove will supplement its Infringement Contentions, removing all DOE contentions.

### II. Specific Deficiencies of the ’814 Patent Infringement Contentions

VirtaMove’s Infringement Contentions for the ’814 Patent amount to mere conclusory statements and fail to put IBM on notice as to “where each element of each asserted claim is found within each Accused Instrumentality.” P.R. 3-1(c). VirtaMove was required to “put forward its positions as to where it believes particular limitations are met by the accused instrumentalities.” *EON Corp. IP Holdings, LLC v. Sensus USA Inc.*, No. 6:09-cv-116-JDL, 2010 WL 346218, at \*2–3 (E.D. Tex. Jan. 21, 2010). VirtaMove failed to do so. By way of example only, IBM identifies the limitations below for which VirtaMove has failed to comply with the requirements of P.R. 3-1(c).

“**[O]perating systems that differ**”/“**[D]ifferent operating systems**” (asserted independent claim 1): Claim 1 recites “a system having a plurality of servers with **operating systems that differ**.” In its Infringement Contentions, VirtaMove does not identify any “**operating systems that differ**.” Although VirtaMove alleges that “IBM Cloud Kubernetes Service runs on individual servers,” VirtaMove is silent as to how such servers allegedly have “**operating systems that differ**,” or even what VirtaMove contends such “**operating systems that differ**” are in the context of the Accused Instrumentalities. *See, e.g.,* ’814 Patent Infringement Contentions, Element 1pre, pg. 1, Element 1b, pg. 22. While VirtaMove includes a screenshot purportedly showing a “Kubernetes cluster architecture,” VirtaMove provides no context as to how it believes the screenshot depicts “**operating systems that differ**.” *See, e.g., id.* at pg. 8. Please identify what VirtaMove contends are “operating systems that differ” or “different operating systems.”

“**[A]ssociated system files**” / “**[A]ssociated local system files**” (asserted independent claim 1): Claim 1 requires that these “**associated system files**” “are utilized in place of the

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*associated local system files*” and “are copies or modified copies of the *associated local system files* that remain resident on the server.” Similar to VirtaMove’s deficient contentions served on HPE, it is unclear what VirtaMove contends are the “associated system files,” and “associated local system files” in its Infringement Contentions against IBM. *See, e.g.*, ’814 Patent Infringement Contentions, Element 1pre, pg. 1, Element 1b, pg. 22, Element 1d, pg. 28, Element 1e, pg. 29. VirtaMove’s Infringement Contentions mention “[e]ach container includes the application software as well as a Linux user space required to execute the application, for example libc/glibc and other shared libraries, configuration files, etc. necessary for the application. For example, the container includes a base OS image, provided by IBM or by a third party, such as a CentOS, RHEL, or Ubuntu base image.” *See, e.g., id.* at pg. 9. However, this provides IBM no notice as to what VirtaMove claims are “*associated system files*” and “*associated local system files*” and specifically what the “other shared libraries, configuration files, etc.” are. *See, e.g., id.* at Element 1b, pg. 22, Element 1d, pg. 28. Please identify with specificity what VirtaMove contends are the “*associated system files*” and “*associated local system files*” beyond the passing reference to “other shared libraries, configuration files, etc. necessary for the application.”

“[S]ecure, executable, applications related to a service” (asserted independent claim 1): Claim 1 requires “a method of providing at least some of the servers in the system with *secure, executable, applications related to a service.*” Similar to VirtaMove’s deficient contentions served on HPE, VirtaMove’s Infringement Contentions do not identify what VirtaMove contends are “*secure, executable, applications related to a service.*” *See, e.g.*, ’814 Patent Infringement Contentions, Element 1pre, pg. 1. Instead, VirtaMove refers to figures pulled from IBM’s webpages and GitHub, which merely depict an “App” within a “Container.” *See, e.g., id.* at pgs. 1-22. Furthermore, VirtaMove references language pulled from IBM’s webpages, which refers to “executable units of software” and “executable package of software,” but does not identify what software constitutes “*secure, executable, applications related to a service.*” *See, e.g., id.* Please identify what VirtaMove contends are the “*secure, executable, applications related to a service.*”

“[A]pplications each include an object executable by at least some of the different operating systems for performing a task related to a service” (asserted independent claim 1): Claim 1 requires “applications each include an *object executable* by at least some of the different operating systems *for performing a task related to the service.*” *See, e.g.*, ’814 Patent Infringement Contentions, Element 1pre, pgs. 1-2. Notwithstanding VirtaMove’s deficient allegations relating to the limitation “different operating systems,” VirtaMove is completely silent as to what it contends is “*an object executable . . . for performing a task related to a service.*” *See, e.g., id.* VirtaMove’s Infringement Contentions broadly refer to “executable units of software,” “executable package of software,” “application code,” and “applications,” but do not identify “*an object executable . . . for performing a task related to a service*” included in “applications” as required by Claim 1. *See, e.g., id.* at pgs. 1-22. Please identify what VirtaMove contends is the “*object executable*” and “*task related to a service.*”



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“[S]toring in memory accessible to at least some of the servers a plurality of secure containers of application software” (asserted independent claim 1): Claim 1 requires “*storing in memory accessible to at least some of the servers a plurality of secure containers of application software.*” See e.g., ’814 Patent Infringement Contentions, Element 1a, pgs. 8-9. VirtaMove’s Infringement Contentions allege that “IBM Cloud Kubernetes stores application containers . . . in persistent storage available to each node running the application.” However, VirtaMove does not offer any allegations suggesting that “a plurality of secure containers of application software” are actually stored in “*persistent storage available to each node running the application.*” Indeed, VirtaMove does not identify “memory accessible to at least some of the servers,” nor does VirtaMove identify “a plurality of secure containers of application software” stored in that memory. Please identify with specificity where VirtaMove contends “*storing in memory accessible to at least some of the servers a plurality of secure containers of application software*” is practiced in the Accused Instrumentalities.

“[T]he application software cannot be shared between the plurality of secure containers of application software” (asserted independent claim 1): Claim 1 requires that “*the application software cannot be shared between the plurality of secure containers of application software.*” See, e.g., ’814 Patent Infringement Contentions, Element 1f, pg. 31. VirtaMove’s Infringement Contentions do not identify what constitutes “*application software*” that “cannot be shared between the plurality of secure containers of application software.” Please identify with specificity what VirtaMove contends is “*application software*” that “cannot be shared between the plurality of secure containers of application software.”

### III. Specific Deficiencies of the ’058 Patent Infringement Contentions

Likewise, VirtaMove’s Infringement Contentions for the ’058 Patent amount to mere conclusory statements and fail to put IBM on notice as to “where each element of each asserted claim is found within each Accused Instrumentality.” P.R. 3-1(c). By way of example only, IBM identifies the limitations below for which VirtaMove has failed to comply with the requirements of P.R. 3-1(c).

“[O]perating system kernel having OS critical system elements (OSCSEs) for running in kernel mode” (asserted independent claim 1): Claim 1 requires “an operating system having an *operating system kernel having OS critical system elements (OSCSEs) for running in kernel mode.*” See, e.g., ’058 Patent Infringement Contentions, Element 1b, pg. 4. Similar to VirtaMove’s deficient contentions served on HPE, VirtaMove’s Infringement Contentions provide no guidance as to what allegedly constitutes “*OSCSEs.*” While VirtaMove includes a Wikipedia screenshot which discusses “glibc,” VirtaMove’s Infringement Contentions do not identify what limitation(s) within element 1b are allegedly met by “glibc.” See, e.g., *id.* at Element 1b, p. 5. For

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example, VirtaMove does not identify how “glibc” or any files stored therein constitute “OSCSEs.” Please identify with specificity what VirtaMove contends are “*OSCSEs*.”

“**[A] shared library having shared library critical system elements (SLCSEs)**” (asserted independent claim 1): Claim 1 requires “*a shared library having shared library critical systems elements.*” See, e.g., ’058 Patent Infringement Contentions, Element 1c, pg. 5. Similar to VirtaMove’s deficient contentions served on HPE, VirtaMove’s Infringement Contentions do not identify a single reference purporting to show, or even mention, a “*shared library*.” While VirtaMove mentions “glibc” functionality and base image layers, it does not identify what limitation or limitations “glibc” or base image layers meet, notwithstanding that VirtaMove points to “glibc” as meeting numerous separately claimed elements. See, e.g., *id.* at Element 1b, p. 5; Element 1c, p. 18. Likewise, VirtaMove’s Infringement Contentions do not identify a single reference purporting to show, or even mention, “*shared library critical system elements (SLCSEs)*.” Please identify with specificity what VirtaMove contends are “*a shared library*” and “*SLCSEs*.”

“**Some of the SLCSEs stored in the shared library are functional replicas of OSCSEs and are accessible to some of the plurality of software applications**” (asserted independent claim 1): Claim 1 requires that “*some of the SLCSEs stored in the shared library are functional replicas of OSCSEs and are accessible to some of the plurality of software applications.*” See, e.g., ’058 Patent Infringement Contentions, Element 1d, pg. 18. While VirtaMove contends that “a base image serves as a self-container unit that encompasses all the necessary components for an application to run, including . . . dependencies (i.e., SLCSEs)” and that “[t]he images are based on existing Linux distributions, such as Debian and Ubuntu, including essential system elements (i.e., functional replicas of OSCSEs)[,]” VirtaMove’s Infringement Contentions do not identify any “SLCSE” or “OSCSE,” nor does VirtaMove show how any alleged “SLCSE” is a “functional replica” of an alleged “OSCSE.” Furthermore, VirtaMove’s Infringement Contentions fail to show how “some of the SLCSEs” “are accessible to some of the plurality of software applications.” See, e.g., *id.* at pgs. 18-31. Please identify with specificity where VirtaMove contends there are a “*SLCSE*” and “*OSCSE*” in the Accused Instrumentalities. Please also identify how a “SLCSE” is a “*functional replica*” of an “OSCSE,” including the specific “functions” performed by a “SLCSE” and “OSCSE,” and how a “SLCSE” is “*accessible to* some of the plurality of software applications.”

“**[W]hen one of the SLCSEs is accessed by one or more of the plurality of software applications it forms a part of the one or more of the plurality of software applications**” (asserted independent claim 1): Claim 1 requires that “*when one of the SLCSEs is accessed by one or more of the plurality of software applications it forms a part of the one or more of the plurality of software applications.*” See, e.g., ’058 Patent Infringement Contentions, Element 1d, pg. 18. While VirtaMove’s Infringement Contentions contend that “a base image serves as a self-



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container unit that encompasses all the necessary components for an application to run, including . . . dependencies (i.e., SLCSEs)” and that “[e]ach container image is based on a specific base image, which contains the application code, and dependencies, including system libraries or shared library critical system elements (SLCSEs)[.]” the Infringement Contentions do not identify “one or more of the plurality of software applications” accessing “one of the SLCSEs.” *See, e.g., id.* at pgs. 18-31. Furthermore, VirtaMove’s Infringement Contentions do not identify any of the SLCSEs forming “a part of one or more of the plurality of software applications, much less what constitutes **“one of the SLCSEs”** and/or how any of the alleged “one of the SLCSEs” **“forms a part of the one or more of the plurality of software applications.”** *See, e.g., id.* Please identify with specificity where in the Accused Instrumentalities **“one of the SLCSEs is accessed by one or more of the plurality of software applications”** and **“forms a part of the one or more of the plurality of software applications.”**

**“Wherein an instance of a SLCSE provided to at least a first of the plurality of applications from the shared library is run in a context of said at least first of the plurality of software applications without being shared with other of the plurality of software applications and where at least a second of the plurality of software applications running under the operating system have use of a unique instance of a corresponding critical system element for performing the same function”** (asserted independent claim 1): Claim 1 requires “an instance of a SLCSE provided to at least a first of the plurality of applications from the shared library” and “a unique instance of a corresponding critical system element for performing the same function.” *See, e.g.,* ’058 Patent Infringement Contentions, Element 1e, pg. 32. VirtaMove’s Infringement Contentions do not identify “an instance of a SLCSE,” much less how “an instance of a SLCSE” is “provided to at least a first of the plurality of applications from the shared library.” Indeed, in its Infringement Contentions, VirtaMove merely explains that containers can allegedly use “the same base image” to “create an instance” of an “SLCSE,” without identifying a shared library in the base image, an SLCSE stored within that shared library, and how containers use the base image to create “an instance” of the SLCSE. *See, e.g., id.* at pgs. 32-36. Similarly, Claim 1 requires **“a unique instance of a corresponding critical system element for performing the same function.”** *See, e.g., id.* at Element 1e, pg. 32. VirtaMove’s Infringement Contentions fails to offer any guidance as to what constitutes a “unique instance,” what constitutes a “corresponding critical system element,” and/or how critical system elements perform the “same function,” including what specific “function” an alleged SLCSE performs. *See, e.g., id.* at pgs. 32-36. Please identify with specificity what in the Accused Instrumentalities constitutes **“an instance of a SLCSE”** as well as how “an instance of a SLCSE” is **“provided to at least a first of the plurality of applications from the shared library”** and how **“an instance of a SLCSE is run in a context of said at least first of the plurality of software applications without being shared.”** Please also identify with specificity what in the Accused Instrumentalities constitutes a **“unique instance of a corresponding critical system element for performing the same function,”** including what constitutes a “unique

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*instance*,” what constitutes a “*corresponding critical system element*,” and what specific “*functions*” are performed by any alleged SLCSEs.

“[W]herein a SLCSE related to a predetermined function is provided to the first of the plurality of software applications for running a first instance of the SLCSE, and wherein a SLCSE for performing a same function is provided to the second of the plurality of software applications for running a second instance of the SLCSE simultaneously” (asserted independent claim 1): Claim 1 requires “*a SLCSE related to a predetermined function* is provided to the first of the plurality of software applications for *running a first instance of the SLCSE*, and wherein a SLCSE for *performing a same function* is provided to the second of the plurality of software applications for *running a second instance of the SLCSE simultaneously*. See, e.g., ’058 Patent Infringement Contentions, Element 1f, pg. 37. VirtaMove’s Infringement Contentions do not identify what functionality maps to the claimed “SLCSE related to a *predetermined function* . . . for *running a first instance of the SLCSE* and a “SLCSE for *performing a same function* . . . running a *second instance* of the SLCSE *simultaneously*.” See, e.g., *id.* at pgs. 37-39. VirtaMove alleges that “a base image includes essential system files, libraries, and dependencies (i.e., SLCSEs),” but offers no guidance as to the limitations, “*predetermined function*,” “*running the first instance of the SLCSE*,” “*a same function*,” and “*running a second instance* of the SLCSE *simultaneously*.” See, e.g., *id.* Indeed, merely alleging that “[b]ased on information and belief, each element, such as system files, libraries, and dependencies (i.e., SLCSEs) is associated with an execution of a predetermined function related to the application,” is insufficient, especially when considering VirtaMove references screenshots that, at best, broadly suggest that running Docker containers can access the same underlying base image. See, e.g., *id.* Please identify with specificity where VirtaMove contends the Accused Instrumentalities allegedly meet these claim requirements.

**Dependent Claim 2:** Claim 2 requires “*multiple instances of an SLCSE* stored in the *shared library* run simultaneously within the operating system.” See, e.g., ’058 Patent Infringement Contentions, Cl. 2, pg. 39. VirtaMove’s Infringement Contentions do not identify where in the Accused Instrumentalities it contends are “*multiple instances of an SLCSE* stored in the *shared library* run simultaneously within the operating system.” See, e.g., *id.* at pgs. 39-43. While VirtaMove vaguely alleges that “an individual host/node runs multiple containers and/or pods simultaneously, each of which as an instance of an SLCSE,” VirtaMove does not identify what it contends are “*multiple instances of an SLCSE*” and “*the shared library*” and how “*multiple instances of an SLCSE stored in the shared library can be run simultaneously*.” See, e.g., *id.* Please identify with specificity where VirtaMove contends the Accused Instrumentalities allegedly meet these claim requirements.

**Dependent Claim 4:** Claim 4 requires “the one or more SLCSEs provided to one of the plurality of software applications having exclusive use thereof, use system calls to access services

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in the operating system kernel.” *See, e.g.,* ’058 Patent Infringement Contentions, Cl. 4, pg. 48. VirtaMove’s Infringement Contentions merely reference two screenshots, a Wikipedia webpage for “glibc” and a BerOps blog webpage for methods to debug Kubernetes pods. *See, e.g., id.* at pgs. 48-49. IBM cannot discern how the Accused Instrumentalities allegedly meet the elements of this claim based off these two references and a broad allegation that “the SLCSEs in a container use system calls to access services in the operating system kernel.” *See, e.g., id.* Please identify with specificity where VirtaMove contends the Accused Instrumentalities allegedly meet these claim requirements.

**Dependent Claim 18:** Claim 18 requires “[a] computer system as defined in claim 2 wherein SLCSEs are not copies of OSCSEs.” *See, e.g.,* ’058 Patent Infringement Contentions, Cl. 18, pg. 50. VirtaMove’s Infringement Contentions merely allege that “the SLCSEs are provided to the computer system through a separate process than the process by which the OSCSEs are provided to the computer system, and thus are not copied from the OSCSEs.” *See, e.g., id.* at pg. 50-52. VirtaMove does not reference any materials to illustrate what it contends is “the separate process” or what it contends are “SLCSEs” and “OSCSEs,” as discussed above. Instead, VirtaMove references screenshots that simply describe containers, providing no insights into, for example, how or where in the Accused Instrumentalities, “*SLCSEs are not copies of OSCSEs.*” *See, e.g., id.* Please identify with specificity where VirtaMove contends the Accused Instrumentalities allegedly meet these claim requirements.

These inadequacies in VirtaMove’s Infringement Contentions have prejudiced and continue to prejudice IBM in preparing its defenses and invalidity contentions. Accordingly, please confirm that by December 20, 2024 VirtaMove will supplement its Infringement Contentions to address the deficiencies outlined above. We are available to meet and confer regarding these deficiencies at your convenience.

Sincerely,

/s/ Kyle A. Calhoun

Kyle A. Calhoun